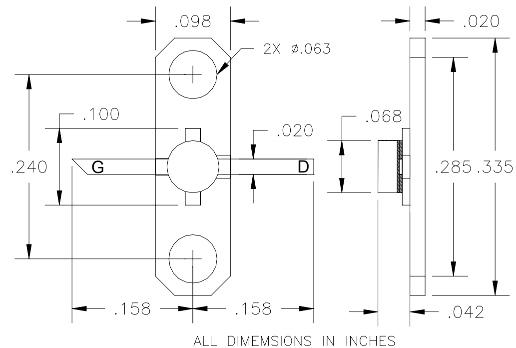
EFA040A-100P

UPDATED 11/17/2006

Low Distortion GaAs Power FET

- NON-HERMETIC 100MIL METAL FLANGE PACKAGE
- +23.0dBm TYPICAL OUTPUT POWER
- 9.0dB TYPICAL POWER GAIN AT 12GHz
- 0.3 X 400 MICRON RECESSED "MUSHROOM" GATE
- Si_3N_4 PASSIVATION
- ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY



ELECTRICAL CHARACTERISTICS (T_a = 25 ^{O}C)

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
P_{1dB}	Output Power at 1dB Compression f= 12GHz V_{DS} = 8V, I_{DS} ≈ 50% I_{DSS} f= 18GHz	21.0	23.0 23.0		dBm
G_{1dB}	Gain at 1dB Compression f= 12GHz V_{DS} = 8V, I_{DS} ≈ 50% I_{DSS} f= 18GHz	7.5	9.0 6.5		dB
PAE	Power Added Efficiency at 1dB Compression V_{DS} = 8V, I_{DS} ≈ 50% I_{DSS} f=12GHz		35		%
I_{DSS}	Saturated Drain Current V_{DS} = 3 V, V_{GS} = 0 V	60	105	160	mA
G_M	Transconductance V_{DS} = 3 V, V_{GS} = 0 V	45	60		mS
V_P	Pinch-off Voltage V_{DS} = 3 V, I_{DS} = 1.0 mA		-2.0	-3.5	V
BV_{GD}	Drain Breakdown Voltage I_{GD} = 1.0mA	-13	-15		V
BV_{GS}	Source Breakdown Voltage I_{GS} = 1.0mA	-7	-14		V
R_{TH}	Thermal Resistance (Au-Sn Eutectic Attach)		115*		ºC/W

Note: * Overall Rth depends on case mounting.

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	ABSOLUTE[1]	CONTINUOUS[2]
V_{DS}	Drain-Source Voltage	12V	8V
V_{GS}	Gate-Source Voltage	-5V	-4V
Igf	Forward Gate Current	1.8 mA	0.6 mA
Igr	Reverse Gate Current	0.3 mA	0.1 mA
Pin	Input Power	20 dBm	@ 3dB Compression
Tch	Channel Temperature	175°C	175°C
Tstg	Storage Temperature	-65/175°C	-65/175°C
Pt	Total Power Dissipation	1.2 W	1.2 W

Note: 1. Exceeding any of the above ratings may result in permanent damage.
2. Exceeding any of the above ratings may reduce MTTF below design goals.

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